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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/673,832	09/01/2000	Matty J. Hartogs	11371	5806

321 7590 02/20/2003

SENNIGER POWERS LEAVITT AND ROEDEL  
ONE METROPOLITAN SQUARE  
16TH FLOOR  
ST LOUIS, MO 63102

EXAMINER

BARR, MICHAEL E

ART UNIT	PAPER NUMBER
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1762

9

DATE MAILED: 02/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-9

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/673,832		HARTOGS ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Michael Barr		1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 January 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-18 and 57 is/are allowed.
- 6) ☒ Claim(s) 19,23-31,34-40,43-49 and 52-56 is/are rejected.
- 7) ☒ Claim(s) 20-22,32,33,41,42,50 and 51 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☒ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>8</u> . | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Preliminary Amendment***

1. The examiner acknowledges the cancellation of Claims 1-8 and the addition of Claims 9-57. Claims 9-57 are pending.

### ***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Europe on 7/16/99. It is noted, however, that applicant has not filed a certified copy of the European application as required by 35 U.S.C. 119(b). A copy of the certified copy is requested to prevent unnecessary processing delays in the future. The present application does not contain a copy of the request concerning filing under 35 USC 371, form PCT/DO/EO/1390 or PTO-1390. It is requested that the applicant submit a copy of this paper to be placed in the file to prevent unnecessary processing delays in the future.

### ***Specification***

4. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 19, 24-31, 35-39, 49, and 53-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 979,779 by Schneble et al. ("Schneble") in view of Mance.

Schneble teaches mixing a resin (plastic) with particles of copper oxide (catalyst) and then milling the mixture, which indicates granulation of the resin and particles, then molding the resin and copper oxide into a shaped body, such as a circuit board, then removing a surface layer of the resin to expose the copper oxide, then activating the copper oxide with an acid, such as sulfuric acid, and then electrolessly plating the shaped body with an electroless plating bath, such as an electroless copper bath, to form copper circuitry (Pg. 2-Pg. 3).

Schneble does not teach the claimed plating initiation time, rate of plating, or plating thickness. However, the Schneble reference is open to the use any conventional electroless copper plating bath. Therefore, it would have been obvious to one skilled in the art to use any conventional electroless copper plating bath for use of forming circuitry, in Schneble, with the expectation of providing the desired results. Mance teaches forming copper circuitry on a dielectric substrate, which has been catalyzed by a catalyst, such as copper, by electroless plating, where the plating is performed for less than 5 minutes at a rate of more than 2 microns per hour (Col. 4, lines 67-68; Col. 9, lines 12-18). The teaching of Mance shows plating initiation in less than 5 minutes and copper plating for the circuitry of more than 20 microns. It would have been obvious to one skilled in the art to use the electroless copper plating bath and process of Mance to apply the electroless copper circuitry in Schneble, with the expectation of providing the desired copper circuitry plating, since it is shown by Mance that such a plating bath and process

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is typically used for such a copper plating for forming circuitry on a copper activated/catalyst surface, which is analogous to that of Schneble. Such a modification in Schneble would have been expected to achieve the claimed plating initiation time, rate of plating, or plating thickness, as it had in Mance.

7. Claims 23, 34, 40, 43-48, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneble in view of Mance and Krulik.

Schneble and Mance are applied here for the same reasons as given above. Schneble and Mance fail to teach that the resin is removed by an alkaline solution. Krulik teaches etching the surface of a circuit board made of a resin, where the resin is etched by exposure to an alkaline solution, including sodium hydroxide (Abstract; Col. 7, line 62-Col. 8, line 18). It would have been obvious to one skilled in the art to use an alkaline solution, such as that of Krulik, to remove the resin from the shaped body of Schneble and Mance, with the expectation providing the desired resin removal, since it is shown by Krulik that alkaline solutions are known for resin etching of circuit boards.

***Allowable Subject Matter***

8. Claims 9-18 and 57 are allowed.

9. Claims 20-22, 32-33, 41-42, and 50-51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is an examiner's statement of reasons for allowance: None of the prior art cited or reviewed by the examiner teaches or fairly suggests the claimed electroless plating

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process where the catalyst is a metal phosphide. The prior art does not teach using an acid to activate metal phosphide fillers for the electroless plating.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Seeger teaches electroless plating a plastic having a metal phosphide filler by exposing the filler. Seeger does not teach or suggest activating the metal phosphide filler with an acid.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Barr whose telephone number is 703-305-7919. The examiner can normally be reached on Monday-Thursday 6:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 or 703-305-5408 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Michael Barr  
Primary Examiner  
Art Unit 1762

MB  
February 13, 2003